

# Problem Based User Education in the Medical Library: How Much for Whom and When

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*User education has a particularly important role in higher education: by making library informatics a required course the librarians themselves can initiate the future graduates into the science of information retrieval. It was a rare initiative when eight years ago the Kenézy Library of the University and National Library at the University of Debrecen designed library informatics, a required course for the students at the Medical and Health Sciences Center of the University of Debrecen (MHSCUD). The credit system, to be initiated in the 2002-2003 academic year is bound to bring significant changes into the teaching of the course.*

## Aims of the Course

In the age of digital libraries; easy access to databases; and the Internet, a storehouse of immense amount of facts *fast and efficient information retrieval* gains special importance. The primary information establishment of the 21<sup>st</sup> century is the library and the librarians are the professional ‘information excavators’ necessary for research. The institutionalization of user education at MHSCUD was an important step, as only the *sufficiently educated professional* can orient him or herself quickly and efficiently in this technical-informational environment. The first step in writing a diploma work or thesis, a scholarly article, or applying for a grant is getting oriented in the maze of scholarly information, evaluating the content of information on the web, and filtering out irrelevant facts.

The *library informatics course* was introduced into the curriculum of the *MHSCUD* (former Medical University of Debrecen) as a required course in the 1993-94 academic year. The initiative was then (and unfortunately still is) a rare one in Hungary. The course aims to familiarize first year medical students with the library, its traditional and electronic services, and to help the students in learning how to retrieve, evaluate and organize information. The course’s goal is to train users who are

- able to formulate information accurately;
- familiar with the set-up and services of the library;
- able to select the most useful source of information (book, course book, journal, article, database) for themselves;
- knowledgeable about the locally accessible databases (through intranet or Internet), and are able to perform searches on their own;
- familiar with the concept of electronic journals, their usage, and also how to access them (through intranet or Internet);
- well-versed in the opportunities provided by the Internet, with special attention to the biomedical websites.

## The Content of the Course

The subject matter of the course consists of five well-separable modules.

### ***Module 1***

#### **Introduction to the Library and Library Use**

Defining information and information management; traditional and non-traditional tools of information retrieval.

Presentation of the library's traditional documents (course books, bound and unbound journals, handbooks, etc.) and services.

Familiarizing students with the traditional and electronic versions of specialized bibliography (the Hungarian Medical Bibliography).

Electronic services: the webpages of the library, online catalogs, lending.

### ***Module 2***

#### **Biomedical Information on the Internet**

Biomedical websites.

Comparing and evaluating medical megasites.

Source criticism: Why evaluation of sources?

Quality evaluation criteria

Quality assessment of web pages

### ***Module 3***

#### **Databases I**

Use of locally available databases (A.D.A.M. = Animated Dissection of Anatomy for Medicine, SAM-CD Connected, Stedman's Medical Dictionary), electronic textbooks, Current Contents Connect, Science Citation Index.

### ***Module 4***

#### **Databases II**

MEDLINE, PubMed

Combination of search terms: Boolean search strategy

MeSH terms( tree structure, subheadings)

Subject searching with MeSH

MeSH vs textword searching

Full text electronic journals on the local network and on the Internet.

### ***Module 5***

#### **Summary, Testing**

Reviewing information retrieval: content form and structure of bibliographic references

Aspects of writing scholarly articles, introducing Author's Instructions, as well as getting acquainted with the most important standards of citation (Harvard, Vancouver, BMJ).

Ethics of citation, copy-right rules.

Critical appraisal technique : evidence based medicine

How to formulate a well built clinical question

Searching for the best evidence (kinds of study design)

Primary and secondary studies/sources: Cochrane Library and other relevant data bases

Testing: solving practical exercises, performing a search in one of the databases introduced during the course.

#### **Conditions**

The course is taught by librarians, the average group size is 15-20 students. The classes are held in the library's computer lab equipped with 20 workstations.

#### **Prerequisites**

Basic ability to use a computer, and some knowledge of terminology.

### Requirements

All students are required to regularly attend classes and to sit for the written exam at the end of the course (search exercise).

Medical students who successfully complete the course get a signature (from this academic year 3 credit), while the college level students of laboratory analysis are graded.

### Teacher's Resources

- A course packet written by two librarians.
- The majority of the course material can be found on the webpages of the library ([www.clib.dote.hu](http://www.clib.dote.hu)) both in Hungarian and in English, these consist of links, databases, a short course description, and lecture notes in Hungarian.
- SACKETT, David L. at all. *Evidence-based Medicine: How to Practice and Teach EBM*. Edinburgh: Churchill Livingstone, 1998.
- Related journals

### Recommended Reading

ECO, Umberto. *Hogyan írjunk szakdolgozatot?* 2<sup>nd</sup> ed. Budapest: Gondolat, 1996. 256 p.

HANCOCK, Lee. *Physicians' Guide to the Internet*. Philadelphia: Lippincott-Raven, 1996. 212 p.

HUTH, Edward J. *How to Write and Publish Papers in the Medical Sciences*. 2<sup>nd</sup> ed. Baltimore: Williams & Wilkins, 1990. 252 p.

*Instructions to Authors in the Health Sciences*. <<http://www.mco.edu/lib/instr/libinstra.html>>

MORTON, Leslie T. *How to Use a Medical Library*. 6<sup>th</sup> ed. London: Heinemann, 1979. 118 p.

### The Students

Although the course was originally launched for first year medical students, the circle of students widened as the University of Debrecen introduced new majors. Thus, those taking the courses can be assigned into four groups:

1. Day medical students (general medicine – 10 groups, dentistry – 1 group), pharmacy students (2 groups), and (international) students who pay a tuition fee (10 groups). These groups take the course in either the first or the second semester of the first year. The duration of the course is 10 hours (5 x 2), its language is Hungarian or English.
2. Day students of laboratory analysis: 20 hours (3 groups).
3. Students of the School of Public Health: 6 hours (1 group)
4. Students of 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year as an elective course with a credit points of 6 : 30 hours (2 groups)

Additional, not regular educational programs run by the library:

- Programs for Eastern-European specialists partaking in the courses offered by the Clinic of Obstetrics and Gynecology organized under the auspices of the World Health Organization.
- Life Sciences specialization for library majors at the University of Debrecen.
- Conducting practical studies for library majors.

## **The Nature of the Course**

Due to the versatility of the students the above quoted course description is a flexible frame that can be readily altered regarding content and quantity as circumstances and needs dictate.

*“History” factor:* When the course first run in 1993, we used to spend more time and attention on the traditional services but as electronic services gained space our focus shifted to databases accessible through the Internet and/or the University intranet. For example, today there is no need (or time) to instruct students in the use of the traditional catalog or that of Index Medicus, the hardcopy version of the Medline. However, there is new material to be covered, such as, biomedical electronic journals and databases on the Internet or on CD-ROM. For the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year students the use of evidence-based practice is much more important.

*Time factor:* the course material is reduced (only the most useful elements for the particular user group are taught) or extended (detailed introduction of additional Internet sources, extra practice classes) in relation with the number of hours a course takes.

*The “human” factor:* we fashion the concrete course material according to the specialization and interests of the students. Therefore, only pharmacy students are required to study the *Pharmacology* database, and we show first year medical students several anatomy databases and websites, this, however, is omitted from the course material of the students of the School of Public Health.

*Knowledge in computer science:* although our students usually have a basic knowledge of computers, in case there is a need (usually in the case of correspondent or postgraduate students, or when the library course precedes the computer science courses), we include Internet basics into the course material.

## **Evaluation of the Course**

When evaluating a course in library informatics the most important element to study is how interested the students are. Based on the responses we get, it is clear that there is a definite need for the course. However, both teachers and students question the place of the course in the curriculum.

- Introduction to the services of the library and the anatomy databases and websites are items of the most interest (anatomy courses being in the 2<sup>nd</sup> semester of the first year).
- Students need to have some knowledge of (especially English) medical terminology to successfully search databases and evaluate the results. This, however, is understandably missing or scanty in the first year of medical school, which decreases the students' enthusiasm about the course. The knowledge of databases thus acquired in the first year often “withers” by the third and fourth years when it would be most needed, this being the time of writing diploma works or studies for competitions.

One part of the course material is, therefore, in the right place at the right time (Modules 1 – 3). To solve the problem arising in connection with the second part (Modules 4, 5, and, to some extent, 2) we decided – partially as a response to the request of the students – to design a “reminder” course for third and fourth year students, both to revise forgotten information and also to show them new databases and opportunities provided by the library. The effectiveness and success of the course is further enhanced by the well-known method of Problem-Based Learning, which is a technique of teaching and learning that matches the methods used in teaching medical and health sciences.

### **The Future**

The 2002 – 2003 initiation of credit based curriculum at the Medical and Health Sciences Center of the University of Debrecen is quite likely to lead to changes in teaching library informatics. The information tools and sources supplied by the Kenézy Library of the University and National Library at the University of Debrecen can be put into two groups. Based on these two groups we suggest setting up two library informatics courses:

1. A required course on dictionaries, anatomy databases, Internet sources necessary for first and second year students to be taught in the first year in 10 hours as a part of a 40-hour computer science basics course.
2. An optional course on databases useful for research, handbooks, information sources, as well as teaching aspects of content evaluation and search techniques. The course would be taught in 30 hours for fourth and fifth year students.

Furthermore, we suggest a cooperation between library informatics and other specialized subjects as well. In the course of such a cooperation – corresponding with the method of Problem-Based Learning – students could be given research exercises, for which solutions could be found in the information sources offered by the library. The course puts stress on the critical evaluation methods of medical literature as being knowledgeable about the theoretical foundations of evidence based medicine is vital in contemporary medical practice.